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REMARKS

Status of the Application

Claims 1 -19 are pending in the application, claims 2, 5 -16, 18 and 19 are withdrawn from consideration. Applicants reserved the right to file further continuation applications on any subject matter disclosed in the instant application or on the subject matter of any previously or presently cancelled claim.

Prior to entry of this Amendment, claims 1, 3, 4 and 17 were under consideration. With this amendment Claims 1, 3, 4 and 17 have been amended to more clearly and distinctly claim the invention. Applicants assert new matter has not been introduced by the amendments. With this Amendment, Claims 20 – 23 are newly added. Support for new Claim 20 is found in the application as filed, for example paragraphs [155] – [157]. Support for new Claim 21 is found in the application as filed for example, paragraph [160]. Support for new Claims 22-23 is found in the application as filed for example, paragraph [151]. Applicants assert that new matter has not been introduced by the claims and entry is respectfully requested.

Drawings

The Patent Office objected to the Drawings of this application due to the presence of nucleic acid and protein sequences without sequence identifiers i.e. SEQ ID NOs submitted on 3/26/2004. The Patent Office stated that the drawings are not considered citing 37 CFR §1.821(d) (Office Action page 4). Applicants respectfully traverse.

For the convenience of the Patent Office, the text of 37 CFR §1.821(d) is provided below.:

Where the description or claims of a patent application discuss a sequence that is set forth in the "Sequence Listing" in accordance with paragraph (c) of this section, reference must be made to the sequence by use of the sequence identifier, preceded by "SEQ ID NO:" in the text of the description or claims, even if the sequence is also embedded in the text of the description or claims of the patent application.

The requisite SEQ ID NOs are provided in the specification in the Brief Description of the Drawings. Accordingly, Applicants submit that the application is in full compliance with 37 CFR §1.821(d). For example, paragraphs [16]-[20] describe Figures 1-5 and provide SEQ ID NO:1 through SEQ ID NO: 6. Also, Paragraphs [30] – [31] describe Figures 14-15 and provide SEQ ID NO:7 through SEQ ID NO:12.

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Applicants are not aware of any requirement that SEQ ID NOs be provided within the drawings when the SEQ ID NOs are provided in the Description of the Drawings. Accordingly, withdrawal of the objection and consideration of the Drawings is respectfully requested.

Claim Objections

The Patent Office objected to Claim 1 as encompassing non-elected subject matter. With this Amendment, Applicant has amended Claim 1 to remove non-elected subject matter. Applicants reserved the right to file further continuation applications on any subject matter of prior Claim 1. Withdrawal of the objection is respectfully requested.

Claim Rejections under 35 U.S.C. §101

Claims 1 and 3-4 stand rejected 35 U.S.C. §101 because the claimed invention is allegedly directed to non-statutory subject matter (Office Action, page 4). Applicants respectfully traverse. However, Applicants have amended to Claim 1 to include the phrase "[a]n isolated" polypeptide. Likewise, dependent claims 3-4 have been amended to recite the phrase "isolated" polypeptide.

Withdrawal of the objection of Claims 1, and 3 - 4 under 35 U.S.C. §101 is respectfully requested.

Claim Rejections under 35 U.S.C. §112, second paragraph

Claims 1, 3 - 4 and 17 stand rejected under 35 USC §112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Patent Office points out that Claim 1 recites "CBH1.1 variant" which is alleged as being unclear as to the scope of the mutants of CBH. Although Applicants respectfully disagree with the Patent Office, in order to further the prosecution of the present application and Applicant's business interests, yet without acquiescing to the Examiner's arguments, the phrase "CBH1.1 variant" has been removed from Claims 1, 3 - 4 and 17. Withdrawal of the rejection of Claims 1, 3-4 and 17 under 35 U.S.C. §112, second paragraph is respectfully requested.

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Claim Rejections under 35 U.S.C. §112, first paragraph

Claims 1, 3 - 4 and 17 stand rejected under 35 USC §112, first paragraph as failing to be described in the specification. Specifically, the Patent Office asserts that the claim scope is not commensurate with the enablement provided by the disclosure with regard to any variant having CBH1 activity and having no known identity to SEQ ID NO:3 and SEQ ID NO:4. Applicants respectfully traverse.

The first paragraph of 35 U.S.C. § 112 requires, *inter alia*, that the specification of a patent enable any person skilled in the art to which it pertains to make and use the claimed invention. Although the statute does not say so, enablement requires that the specification teach those in the art to make and use the invention without 'undue experimentation.' In *re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). That some experimentation may be required is not fatal; the issue is whether the amount of experimentation required is 'undue.' *Id.* at 736-37, 8 USPQ2d at 1404. In *re Vaeck*, 947 F.2d 488, 495, 20 USPQ2d 1438, 1444 (Fed. Cir. 1991). The question is whether the disclosure is sufficient to enable those skilled in the art to practice the claimed invention; the specification need not disclose what is well known in the art. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984) (citing *In re Myers*, 410 F.2d 420, 161 USPQ 668 (CCPA 1969)). "A patent need not teach, and preferably omits, what is well known in the art." *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1534, 3 USPQ2d 1737, 1743 (Fed. Cir. 1987). "Not every last detail is to be described, else patent specifications would turn into production specifications, which they were never intended to be." *In re Gay*, 309 F.2d 769, 774, 135 USPQ 311, 316 (CCPA 1962).

Applicants submits that the claimed enzymes possess CBH1 activity. Therefore, the claims would encompass variant CBH1 enzymes that possess CBH1 activity as defined in the present specification. The fact that Applicants do not explicitly provide examples regarding every variant encompassed by the present invention does not render the present claims unpatentable. Techniques were well known in the art on how to compare the protein with other proteins and have a reasonable expectation of success, and for determining enzyme activity (e.g., using standard assays). Beginning with the sequence provided one of skill in the art would know how to proceed if they wanted to generate variants – compare the sequence with known related sequences, modifying the nucleic acid sequence encoding the parent cellulase to produce a nucleic

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add sequence encoding a variant of the parent cellulase having a deletion, insertion, and expressing the modified nucleic acid sequence in a host cell to produce the variant. All of the methods and techniques were familiar to the skilled artisan and are not required to be taught in the specification. Moreover, companies which develop enzymes are able to produce and screen thousands of enzymes (and the polynucleotides that encode them) in a short period of time. Indeed, enzyme companies have developed automated robotic systems for producing and screening enzymes.

Although Applicants respectfully disagree with the Patent Office, in order to further the prosecution of the present application and Applicant's business interests, yet without acquiescing to the Examiner's arguments, Applicants have amended Claims 1, 3 - 4 and 17 to remove the phrase "CBH1 variant". Applicants respectfully request reconsideration 1, 3 - 4 and 17 and withdrawal of the rejection.

Claim Rejections under 35 U.S.C. §102(b)

The Patent Office rejected Claims 1, 3 - 4 and 17 under 35 U.S.C. §102(b) as allegedly being anticipated by Takashima *et al.* (UniProt Accession No; Q1262). Specifically the Patent Office alleges that Takashima teaches a cellulase that is 99.8% identical to SEQ ID NO: 3 and 4 of the instant application. Applicants respectfully traverse.

Applicants draw the Patent Offices attention to the specification at paragraph [20] and FIG 5. FIG. 5 shows an alignment of two public and a variant *Humicola grisea* CBH1.1 mature sequences. The two public sequences are X17258 (SEQ ID NO:5) and D63515 (SEQ ID NO:6).

Applicants have amended Claim 1 to remove the phrase "CBH1 variants" and direct the claims to the amino acid sequence of SEQ ID NO:4. Accordingly, the sequence disclosed in Takashima does not teach or suggest the sequence disclosed in Claims 1, 3 - 4 and 17. Accordingly, Applicants respectfully request that the rejection of Claim 1, claims 3-4 and 17 under 35 U.S.C. §102(b) be withdrawn.

Claim Rejections under 35 U.S.C. §102(e)

The Patent Office has rejected Claims 1, 3 - 4 and 17 under 35 U.S.C. §102(e) as allegedly being anticipated by Lange *et al.* (WO200300941). Specifically the Patent Office alleges that Lange teaches a cellobiohydrolase isolated from *Humicola* sp. which is

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99.8% identical to SEQ ID NO: 3 and 99.6% identical to SEQ ID NO: 4 of the instant application. Applicants respectfully traverse.

Applicants have reviewed the Lange *et al.* reference and were unable to find any sequence from a *Humicola* sp. which is 99.8% identical to SEQ ID NO: 3 and 99.6% identical to SEQ ID NO: 4 of the instant application. However, the 102(e) rejection in light of Lange *et al.* is moot. Applicants have amended Claim 1, 3 - 4 and 17 to remove the phrase "CBH1 variants" and direct the claims to the amino acid sequence of SEQ ID NO:4 and SEQ ID NO:3.

Lange *et al.* does not teach or suggest the subject matter disclosed in pending Claims 1, 3 - 4 and 17. Accordingly, Applicants respectfully request that the rejection of Claim 1, claims 3 - 4 and 17 under 35 U.S.C. §102(e) be withdrawn.

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CONCLUSION

In light of the above amendments, as well as the remarks, the Applicants believe the pending claims are in condition for allowance and issuance of a formal Notice of Allowance at an early date is respectfully requested. If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (650) 846-7614.

The Commissioner is authorized to charge any fees that may be required in connection with this submission and to credit any overpayments to Deposit Account No. 07-1048 (Attorney Docket No. GC794-2).

Respectfully submitted,

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